

Amendment to the Claims:

This listing of claims will replace all prior versions and listing of claims in the above-referenced application.

1. (Currently Amended) A substrate system, comprising:

photo-polymerizable monomers,

bioactive molecules admixed with the monomers,

~~wherein, upon polymerization, the monomers produce a cross-linked structure that undergoes a solid-gel transition at the body temperature of the living organism to which the substrate system is administered, and~~

a material insoluble by the monomers and that shields the bioactive molecules from a polymerization process,

wherein the monomers cross-link to form a polymer that contains the bioactive molecules and insoluble material, and wherein the insoluble material is a solid at below the body temperature of a living organism and a gel at the body temperature of a living organism~~during the polymerization process.~~

2. (Cancelled).

3. (Currently Amended) The system of claim 1, wherein the bioactive materials of the substrate system ~~is administered to a subject to replace, repair, or restructure~~ replace, repair or restructure the ~~subject's tissue~~ of the living organism.

4. (Cancelled).

5. (Cancelled).

6. (Original) The system of claim 1, wherein the insoluble material is gelatin.

7.-11. (Cancelled).

12. (Currently Amended) The system of claim 1, wherein the bioactive ~~material is a protein~~ molecules are proteins.

13.-20. (Cancelled).

21. (Currently Amended) The system of claim 1, further including a binder, wherein the binder binds the insoluble material to shield ~~protect~~ the bioactive molecules from a polymerization process.

22. (Previously Presented) The system of claim 21, wherein the binder is a sugar.

23. (Cancelled).

24. (Cancelled).

25. (Currently Amended) The system of claim 1, further including a plasticizer, wherein the plasticizer increases the flexibility of the cross-linked polymer ~~structure~~.

26. (Previously Presented) The system of claim 25, wherein the plasticizer is a polyethylene glycol.

27. (Previously Presented) The system of claim 1, further including a disaggregant, wherein the disaggregant aids with the solid-gel transition.

28. (Previously Presented) The system of claim 27, wherein the disaggregant is a cross-linked synthetic polymer.

29. (Currently Amended) The system of claim 1, wherein the insoluble material comprises granulated particles, ~~wherein the granulated particles protect~~ that shield the bioactive molecules from ~~[[the]]~~ a polymerization process.

30. (Currently Amended) The system of claim 1, further comprising a photopolymerization means for polymerizing the monomers to produce ~~[[a]] the cross-linked structure polymer~~ including the bioactive molecules and insoluble material.

31. (Currently Amended) The system of claim 30, wherein the photopolymerization means uses ~~[[is]] visible radiation for polymerizing the monomers to produce the cross-linked polymer~~.

32.-55. (Cancelled).

56. (Currently Amended) The system of ~~claim 32~~ claim 82, wherein the insoluble material comprises granulated particles, wherein the granulated particles protect the bioactive molecules from the polymerization process.

57. (Currently Amended) The ~~substrate~~ system of ~~claim 32~~ claim 82, wherein the drug delivery system is a dissolution-controlled ~~systems~~ system.

58.-81. (Cancelled).

82. (New) The system of claim 1, further comprising a drug-loaded delivery system, wherein the drug-loaded delivery system delivers the bioactive molecules to the living organism.

83. (New) A new system for tissue engineering, comprising:

- photo-polymerizable monomers,
- bioactive proteins admixed with the monomers,
- a photopolymerization means for polymerizing the monomers to produce a cross-linked polymer, and
- a gelatin insoluble by the monomers and that shields the bioactive proteins from a polymerization process,

wherein the monomers cross-link to form a polymer that contains the bioactive proteins and gelatin, and wherein the gelatin is a solid at below the body temperature of a living organism and a gel at the body temperature of a living organism and wherein the gelatin protects the bioactive proteins during the polymerization process.

84. (New) A substrate system comprising:

photo-polymerizable monomers,
bioactive molecules admixed with the monomers,
a material insoluble by the monomers material which is a solid at below the body temperature of a living organism and a gel at the body temperature of a living organism, and
wherein the insoluble material and bioactive molecules are granulated prior to admixing with the monomers and wherein the insoluble material shields the bioactive molecules from a polymerization process.